CLAIMS

1- Double-barrelled body for a personal firearm characterized in that it is composed of:

- a central stock (1) including three handles (2, 3 & 4) located under said stock and arranged such that:
  - o the front handle (3) forms a retractable bi-pod (35) and a pump function,
  - o the central handle (2) forms a barrel distribution and fire control unit,
  - o the aft handle (4) forms magazine housings (22 & 23) and ergonomic stock.
- a pump-action common cocking device to both breeches ,
- a front handle/pump/bi-pod guiding unit,
- a front half-handle side-by-side stretched keeping device,
- an angular clearance bi-pod command device,
- an alternate lever (51) deployment/retraction device,
- a breeches/barrels selection/distribution device (16),
- a selective breeches manoeuvre/engagement device,
- a differential locking/unlocking breeches device (33),
- a rod/breech unlocking device (62) during fire,
- an ergonomic function command device (64),
- a telescopic bayonet/flame-mitigator (13) device,
- a high specific impulse ammunitions shock absorber (71 to 79) device.

2 - Double-barrelled body for a personal firearm according to claim 1 characterized in that the front handle forming retractable bi-pod (35) be constituted with the following elements.

The integrated bi-pod unit including:

- (42) a pivot/support unit for both pump/handles halves,
- (3 bis) two side-by-side half-handles,
- (43) a casing/support for each half-handle,
- (51) an alternate retractable coking lever,
- (52) alternate coking lever section enlargement,
- (46) lateral clearance axis per half pump/handle,
- (47) a half pump/handle deployment split spring (spiral or U shaped),
- (49) a half pump/handle retracted position pin,
- (35) two bi-pod telescopic deployable parts,
- (36) a bi-pod telescopic deployable part arrester per handle,
- (37) a telescopic deployable bi-pod parts length adjustment arrester per handle,
- (38) a telescopic deployed bi-pod parts erasable locker per handle,
- (48) a split angular abutment for each half pump/handle.

A steering/base block (39) unit for said bi-pod including:

- (39) a handle base block for the handle/bi-pod unit,
- (34) a trigger integral with the support/guide block (39) of the pump/handle unit,
- (40) a roll clearance effaceable neutral abutment for the steering/base block (39) of the pump/handle unit,
- (41) a shaft for coupling the handle base block (39) of the pump/handle unit with the cocking rod unit (50), and to simultaneously retract the cocking lever (51),
- (44) a locker for pivot/support unit (42) in its steering/base block (39) housing,
- (45) a yaw clearance effaceable neutral abutment of pivot/support unit (42) of half pump/handles,

3 - Double-barrelled body for a personal firearm according to claims 1 & 2 characterized in that the two breeches cocking pump-action device includes:

- (50) a steering block for cocking rod and alternate cocking lever,
- (51) an alternate retractable coking lever,
- (52) alternate coking lever section enlargement,
- (53) alternate coking lever busc,
- (54) alternate coking lever extended position recoil spring,
- (27) a breech cocking shaft/rod,
- (55) a smooth link (rotule, axis... debating in site and azimuth) between the shaft and steering block (50),

4 - Double-barrelled body for a personal firearm according to claims 1, 2 & 3 characterized in that the steering device for the pump/handle/bi-pod unit includes:

- (56) a steering rod for the handle base block (39) of the pump/handle unit and steering block (50) for shaft (27) and cocking lever (51),
- (57) a recoil spring for steering block (50) unit,
- (58) a cocking rod and alternate lever (51) steering block (50) unit course abutment,
- (59) a travelling groove for erasable neutral abutment (40) of the steering block (50) unit.

5 - Double-barrelled body for a personal firearm according to claims 1, 2, 3 & 4 characterized in that the rod (56) adopts an oval section (with vertical main axis) for the length corresponding to the steering block (50), rod (27) and alternate lever (51) course, then, on the remaining length adopts a round section whose diameter is equal to the large axis of said oval section. Such a disposition ensures an abutment effect (58) for the steering block (50) whose rod (56) travel channel section is matching said oval rod, preventing any further overshoot of the scheduled course. The channel through handle base block (39) of the pump/handle unit is, on the other hand, round to ensure said pump/handle unit sliding over the whole rod (56) length.

6 - Double-barrelled body for a personal firearm according to claims 1 & 2 characterized in that the side-by-side stretched keeping device for half-handles (3 bis) is composed of side-bars (49) arranged so that the alternate lever (51), in retracted position, applies on said side-bars a vertical up pressure.

7 - Double-barrelled body for a personal firearm according to claims 1, 2, 3 & 4 characterized in that the alternate cocking lever (51) bears a section enlargement (52) in order to, during a forward movement of the bi-pod/pump/handle (39), provoke the automatic bi-pod extension via each half-handle telescopic element arrester (36) opening who, stretching against said section enlargement (52), cause their unlocking.

8 - Double-barrelled body for a personal firearm according to claims 1 & 2 characterized in that the angular bi-pod clearance steering device be composed of split abutments (48) and a tapered/conical window (60) opening (61) arranged on the lower face of the front central stock such that, during the forward travel of the pump/handle unit the engagement of the tapered opening (61) of said window (60) by half-handles causes their opening until they quit resting against said cone (61) to rest against the split abutments (48).

9 - Double-barrelled body for a personal firearm according to claims 1, 2, 3 & 4 characterized in that the deployment/retraction of the alternate cocking lever (51) device includes a shaft (41) for coupling the handle base block (39) of the pump/handle unit to the cocking rod unit (50), and a busc (53) arranged on said lever (51), said shaft cooperating with said busc in order to ensure ensure the deployment, assisted by the return spring (54), or the retraction of said lever (51) following a two blocs (39 & 50) splitting or merging.

10 - Double-barrelled body for a personal firearm according to claims 1 & 3 characterized in that the breech/barrel selection/distribution device be composed of a two or three positions (left-neutral-right) selector located on the central handle (2) under the trigger-guard in order to be permanently accessible by major finger, and of a single stem (26) integral with said selector including at its end a mechanism (fork, locking pin ...) cooperating with the breech cocking shaft/rod (27) in order to favour the switching of said rod towards the appropriate breech (14 or 15) for its engagement simultaneously following said selector switching. This selector ensures the laser rangefinder triggering when a pressure is applied as well as the simultaneous presentation of selected bore parameters in the fire control sight.

11 - Double-barrelled body for a personal firearm according to claims 1 & 3 characterized in that the selective breech (14 & 15) engagement device be assured by the arrangement on their lower side face of a housing (29 & 30), machined in depth in the mass, symmetrically female shaped to the rod (27) end integrating a hook (31) with which they cooperate. The female hook of breeches housings (29 & 30) is to be side engaged par that (31) of said rod and said housings are so conceived that they authorise a vertical clearance of said rod to favour the disengagement of its own hook (31) from the breeches female hook when raised.

12 - Double-barrelled body for a personal firearm according to claims 1, 3, 10 & 11 characterized in that the differential breech locking/unlocking device (or unselected breech locking) be composed of slits or housings (33 bis) located on each breech and a swing locker/selector (33) V or crescent shaped mounted in front of the slits between the two breeches and articulated according to a parallel axis to the weapon's one, in such a way that the cocking rod (27) passes inside the V to cause, during a side move of said rod, a swing movement of the locker of which a branch comes to engage the slit (33 bis) of the unselected barrel to lock it and simultaneously clear the selected breech's one to liberate it.

13 - Double-barrelled body for a personal firearm according to claims 1, 3 & 11 characterized in that the breech/rod unlocking device during firing be composed of a cam (62) integral with the trigger in direct contact with said rod or via a vertical bushel moved by said cam, such that pressure applied on the trigger initiates an upwards movement of the cam which raises the cocking rod and causes its desolidarisation from the matching breech (14 or 15) and this as long as the trigger remains depressed.

14 - Double-barrelled body for a personal firearm according to claim 1 characterized in that the aft ergonomic handle (4) be arranged in such a way that it shapes a busc (5) at its junction with the main body shaft (1) in order to:

- ensure a perfect and constant weapon resting against the shooter's shoulder for the best accuracy, particularly in reactive shooting,
- provide a shortening of the weapon with an aft set of the barrel(s)/chamber(s) unit above shooter's shoulder,
- ensure the positioning of the barrel middle axis above the shooter's shoulder in order to systematically present the aiming line in front of said shooter's eye, reduce head tilting and favour reactive shooting,
- favour a particularly strong two hands holding with the central handle help for the bayonet manoeuvring and increase, in such configuration, the weapon length.

15 - Double-barrelled body for a personal firearm according to claim 1 characterized in that the ergonomic function control device includes a selector (64) (square or crescent shaped to accommodate shooter's thumb) placed on the central handle and more or less vertically or parallel to its axis at the trigger level, in order to be activated by shooter's thumb. A forward thumb pressure generates a swing or movement of this lever with concomitant action at the fire control level. This lever is repeated on both firearm sides for perfect ambidextrous use of the body. This command setting may advantageously be applied to the modification at will of the fire range (incrementation/decrementation by one or two meters steps for example) or be mounted on any type of weapon (automatic handguns...) having a magazine included in a handle in order to activate the magazine arrester to initiate said magazine ejection with a simple forward thumb pressure without requiring a hand to leave said weapon.

16 - Double-barrelled body for a personal firearm according to claim 1 characterized in that the telescopic bayonet/flame mitigator device be composed of an open tube, tapered at one end, telescopic and sliding mounted around a barrel (preferentially the small calibre one), including a spring arrester (65) cooperating with two arresting notches located on said barrel, one near the bedding (6) and the other at the end, respectively corresponding to the retracted and extended position, said tube including in addition openings (round, oval, rectangular...) (66) eventually harmonized with the barrel rifling are arranged at the circumference of the bayonet in such order that, when extended, they act as a flame mitigator.

17 - Double-barrelled body for a personal firearm according to claim 1 characterized in that the high specific impulse ammunitions recoil absorber be composed of:

- a recoil absorber piston (71) located in the barrel axis at the back and integral with the breech,
- a cylinder (72) for recoil absorber piston (71) integral with the breech (15) course abutment (81),
- a distribution/regulation floodgate (74) connected to:
  - a gas port pipe (73) at the level of the piston head (82),
  - a gas driving pipe (73 bis) towards the recoil absorber (72) cylinder,
  - a bleed pipe (79) opening onto weapon's extremity,
  - a return spring (78).

18 - Double-barrelled body for a personal firearm according to claim 1 and 17 characterized in that the distribution/regulation floodgate (74) of the recoil absorbing device includes a drawer (75), integrating two gas switch pipes (76 & 76 bis), mounted sliding in a housing (squared, oblong...) preventing any self rotation of said drawer. The drawer is kept into position by a return spring (77). The floodgate is connected to the gas port pipe (73) of the piston head (82), to the cylinder damper (73 bis) and bleed (79) pipes in order that when:

- the drawer is at rest (fig. 19), the switch pipe (76 bis) ensures the communication of the gas pipe for cylinder damper (73 bis) with that of the bleed pipe (79) and the simultaneous closure of the gas port pipe (73) of the piston head (82).
- during the cartridge ignition the gas involve a drawer displacement such that the swing pipe (76) puts the gas port pipe (73) into communication with that of cylinder damper (73 bis) and the bleed pipe (79) closure.